

MEDICINE

Fat Molecules Not Key

► HOPE that the measurement of certain large fat molecules in the blood would detect a tendency to heart disease in well persons has failed, in the light of experiments reported to the American Heart Association meeting in Cincinnati.

The current experiments involving a four-year study of more than 2,000 persons by scientists at Harvard School of Public Health were reported by Dr. George V. Mann.

The earlier findings, reported nearly a decade ago, were hailed at that time by some who thought the measurement of the large fat molecules, called lipoproteins, would give a means of diagnosing coronary artery hardening before a heart attack.

Countless well persons went on a low-cholesterol diet as a result of the earlier findings.

The idea was to avoid the heart attack apparently forecast by the large protein molecule measurements of their blood. Many of the large protein molecules contain cholesterol, a constituent of all animal fats and oils.

The Harvard scientists measured both cholesterol and the suspect lipoproteins in the blood of nearly 2,000 well men and women and nearly 300 patients with established coronary heart disease.

Each of the measurements showed great variability within each age and sex group. In 273 men who had survived a heart attack, cholesterol and lipoprotein levels were

higher, on an average, than in well men. Cholesterol levels were a somewhat better index of the presence of coronary artery disease, especially in younger men, the Harvard group found, than the lipoprotein measurements.

Both measurements showed poorer differentiation between sick and well people as age levels rose, Dr. Mann reported.

Both were found to be related to body weight, with obese people of either sex tending to have higher cholesterol and lipoprotein levels than thin people. The data suggest that the increase of lipid levels with age may be the result of getting fatter. This in turn implies that the increase of coronary heart disease with age may be in part a consequence of this fattening.

Since cholesterol and lipoprotein levels were elevated in persons with heart disease, the disease is undoubtedly associated with some disorder of fat metabolism. However, both cholesterol and lipoprotein levels were higher, so that measurement of cholesterol alone would serve at least as well as measurement of lipoproteins in studying this disorder. This is of practical importance, Dr. Mann said, because the lipoprotein measurements are both technically more difficult and very expensive.

"The lipoprotein measurements were not found to have the unique diagnostic value which has been claimed for them," he concluded.

Science News Letter, November 10, 1956

MEDICINE

Attack Cancer by Glands

► PARTIAL SUCCESS in attacking cancer through various glands of the body was reported at the American Cancer Society meeting in New York.

About 30% of the patients with breast cancer that had spread through the body have had the secondary cancers checked through removal of both adrenal glands and ovaries, Sir Stanford Cade of Westminster Hospital and Medical School, London, Eng., reported. The cancers checked were in bones, internal organs and skin.

More than half, 55% of the patients previously bedridden and severely incapacitated were able to return to a "near normal life," and those with cancers that had spread to bones had complete pain relief.

The patients dependent on adrenal hormones after their glands were removed survived from six months to three years. No other method of treatment, with the exception of removal of the pituitary gland, has given similar results, Sir Stanford said.

All the patients had previously had other forms of treatment without success. Only

seven of the 135 patients died as a result of the operation, and this mortality has been falling, with only three deaths in the last 70 patients.

Cutting out various body glands to control cancer has "distracted interest" from the use of female hormones, yet this method brings favorable results in women past the menopause, Dr. B. J. Kennedy of the University of Minnesota Medical School, Minneapolis, reported.

A male hormone compound, he also reported, has caused regression of the cancer in 10 of 36 patients with advanced breast cancer.

Non-hormone chemicals, such as Ampheno, which can suppress function of the adrenal glands, may be the answer to this attack on cancer, Dr. Roy Hertz of the National Cancer Institute, Bethesda, Md., suggested. Such treatment would avoid the need to operate and cut out the glands. Ampheno itself has toxic side-effects that limit its usefulness as treatment, but less toxic related chemicals may be produced.

Science News Letter, November 10, 1956

MEDICINE

Corn Oil Cuts Down Cholesterol in Blood

► CORN OIL substituted for butter and other animal fats might be the way to keep cholesterol from accumulating in excessive amounts in the blood. Excess of this fatty chemical is believed involved in artery damage leading to heart disease.

The corn oil instead of animal fats idea comes from experiments reported to the Royal College of Physicians and Surgeons of Canada meeting in Toronto.

The experiments, in which over 100 medical students ate a basic diet with variations in the fats, were reported by Drs. J. M. R. Beveridge, Walter Ford Connell and G. A. Mayer of Kingston, Ont.

When corn oil furnished from one-fifth to six-tenths of the calories in the diet, cholesterol in the blood serum was reduced. When the diets were high in butter, beef dripping, chicken fat or lard, cholesterol in the blood increased.

Even after cholesterol had been decreased in the blood by a diet without any fat, adding corn oil further decreased the level of cholesterol.

Science News Letter, November 10, 1956

MEDICINE

Pituitary Plays Part In Breast Cancer

► A "NEAR CAUSE" of breast cancer may be the sustained stimulation of the breast by hormones from the pituitary gland in the head, Dr. Jacob Furth of Children's Cancer Research Foundation, Harvard Medical School, Boston, reported at the American Cancer Society meeting in New York.

"The pituitary," he explained, "is a mosaic of several differentiated cells with well-defined functions. It has been possible to develop tumorous masses of specific cell types of the pituitary by sustained stimulation. Growth persists as long as the stimulus is maintained."

Three types of functional pituitary gland tumors have been established. One influences the thyroid gland, another the breast, or mammary gland, and the third the adrenal glands.

The thyroid-influencing pituitary tumors are brought on and maintained by deficiency of thyroid hormone. The mammary-gland-influencing tumors are brought on and maintained by continuous excess of estrogen, or female hormone.

The pituitary gland tumor that is functioning and producing its special hormone can in turn give rise to tumors in the target organ. Sustained stimulation of the thyroid by thyroid-influencing pituitary tumors leads to thyroid tumors. The same happens in the case of breast tumors, or cancers, Dr. Furth thinks, with estrogens exerting their stimulating effect on the pituitary gland cells that influence the breast.

Science News Letter, November 10, 1956